

COLORADO OFFICE
10758 W. CENTENNIAL RD., STE. 200
LITTLETON, CO 80127
TEL: 866.981.4588
FAX: 720.981.5643



WYOMING OFFICE
5880 ENTERPRISE DR., STE. 200
CASPER, WY 82609
TEL: 307.265.2373
FAX: 307.265.2801

Comments from Ur-Energy Inc. and its Subsidiaries on Draft Area UIC Class III Permit No. SD31231-00000, Dewey-Burdock Uranium In-Situ Recovery Project

Ur-Energy, whose scientists and engineers have decades of experience permitting, constructing, operating, and reclaiming in situ uranium mines, provide the following general and specific comments on the Draft UIC Class III Area Permit for the Dewey-Burdock Project.

General Comments

Ur-Energy is concerned that despite decades of successful regulation of in situ uranium mining by various states and the Nuclear Regulatory Commission ("NRC"), the EPA has elected to devise a new regulatory scheme for the Dewey-Burdock Project. The new and unprecedented requirements include:

- Conducting post-restoration groundwater monitoring for each wellfield after NRC approval that groundwater restoration has been successfully completed;
- Installing a new down-gradient compliance boundary ("DGCB") monitoring well network for each wellfield inside of that currently required by NRC license requirements;
- Collecting core samples prior to operations and testing these in "pass/fail" laboratory column tests, where a single constituent measured above background concentration would signal a failed test;
- Quarterly groundwater sampling from the DGCB monitoring wells to establish initial baseline values before injection begins in the wellfield;
- Additional monitoring and corrective action requirements for an excursion detected in a non-injection interval monitoring well beyond those reviewed and approved by NRC;
- Additional monitoring and corrective action requirements for an "expanding excursion plume;" and
- Additional monitoring and corrective action requirements for a "remnant excursion plume"

The EPA's attempt to create a new regulatory approach seems to be based largely on concerns that post restoration residual contaminants will damage USDWs. We are certain the EPA is aware of the 2009 NRC staff memorandum to the Commission in which they stated they were unaware of any situation indicating that: (1) the quality of groundwater at a nearby water supply well has been degraded, (2) the use of a water supply well has been discontinued, or (3) a well has been relocated because of impacts attributed to an ISR facility. Similar statements can be found in other NRC documents as well as from the Texas Commission on Environmental Quality ("TCEQ"). Comments by these experienced agencies who operate under mandates to protect the environment should be carefully considered by the EPA when the agency attempts to justify new and burdensome permit conditions.

Some may justify the onerous conditions in the draft permit by arguing that no groundwater problems have been found because we haven't looked long enough or hard enough. This argument is short on technical merit and shouldn't be given serious consideration by a science driven agency such as the EPA. If, however, despite a lack of credible evidence the EPA believes USDWs are being negatively impacted by in situ uranium mining, the agency should fund research to verify and define the problem instead of drafting permit conditions based on unsubstantiated concerns.

In conclusion, we strongly encourage the EPA to remove all unprecedented permit conditions and consult with the NRC and states to develop a draft permit that is consistent with long-standing regulatory practices that have proven to be protective. Failure to do so will place Powertech, as well as any future in situ uranium mines in South Dakota, at a distinct disadvantage while providing no known benefit to the environment.

Specific Comments

1. Part I Section B, pg.2. The first paragraph references 40 CFR §147.2100 which pertains to Class II wells in South Dakota. It appears the reference should be to §147.2101 which discusses EPA's authority with respect to Class III wells.
2. Part II, Section A, pg. 6. Requires wellfields to be at least 1,600 feet from the Permit Area boundary (0.3 miles). The determination of this distance seems arbitrary and is overly restrictive while providing little or no benefit. We believe this distance sets an unreasonable precedent that will likely prevent the complete recovery of mineral resources at future mines. A science based approach to determine this distance is in order. We suggest the EPA work with the proponent to determine an appropriate minimum distance between the wellfields and the permit boundary that is protective of surrounding USDWs (with sound technical justification consistent with requirements of the NRC and other states) while at the same time allowing for recovery of the majority of the resource.

3. Part II Section E(2)(b)(i)(A), PG. 13. Requires the use of Low-Stress (Low Flow) purge/sampling methods. We believe this is too prescriptive for a Class III permit; especially since there are other EPA approved methods for purging of wells which may be more appropriate based on the circumstances. Did EPA consider that some wells may be too deep to be sampled utilizing this technique (this type of pump relies on air pressure to push the water to the surface and there are practical limitations on air compressors as wells as this type of pump)? We suggest replacing this language with a statement that requires the Permittee to sample wells using any appropriate EPA approved method. Further to this discussion, section (C) requires purging three to six casing volumes if stabilization doesn't occur prior to sampling. If a Low-Stress (Low Flow) pump is used to purge three to six casing volumes, it could take an inordinate amount of time to sample a well. For example, a common low flow pump advertised on-line has a maximum pump rate of 100 ml/min. If a monitor well has 230 gallons per casing volume it would take over 400 hours to purge three casing volumes utilizing the low flow pump.
4. Part II Section E, Table 8, pg. 14. This table lists a total of 45 parameters, several of which are not typically found in this geologic setting or are typically not found at levels of concern. We urge the EPA to remove the following parameters from Table 8 or require only one round of analysis to demonstrate the ions aren't present in baseline conditions (Aluminum, Antimony, Beryllium, Boron, Fluoride, Mercury, Nickel, Silver, Strontium, Thallium and Thorium). We suggest the EPA review the list of parameters that NRC requires in Table 2.7.3-1 of NUREG 1569 (also see language immediately above Table 2.7.3-1 that discusses the selection of parameters). Table 8 in the draft permit should more clearly specify if the analysis is to be performed for particulates or dissolved fraction. Finally, the EPA should clarify that gross alpha excludes both radon and uranium in accordance with drinking water MCLs.
5. Part II Section G. It appears the EPA is attempting to establish an experimental method to demonstrate downgradient waters won't be negatively impacted by residual contamination. However, the core testing described in this section is fraught with technical problems that will likely render the results meaningless. For example, it is not reasonable to draw conclusions based on testing a relatively finite sample for a finite period of time. Instead of attempting to develop an experimental method with no previous field verification, we recommend this entire section be deleted. In its place, EPA should rely on geochemical modeling, perhaps based in part on data collected from core samples, to ensure that any residual contamination of concern, if it exists, will not harm downgradient USDWs. We recommend that the EPA consider the NRC's and state's approaches to this matter since they have many decades of experience successfully regulating in situ mines.
6. Part IV. We are concerned that the EPA is attempting to develop a down-gradient monitoring scheme that is inconsistent with requirements currently implemented by any state program or by the NRC. We wonder why the EPA feels the need to implement such onerous standards when we know of no evidence that such drastic measures are warranted; even though commercial in situ mining has been utilized in the U.S. since the mid 1960's. We strongly encourage EPA to delete this entire section and consult with the various states who have primacy as well as the NRC to determine a course of action that is commensurate with the

hazard. Implementation of this section will, in our educated opinion, significantly harm the economics of in-situ mining in the state of South Dakota.

7. Part V, Section E(4), pg. 33 requires 120% of the calculated volume be used. This statement isn't clear since I assume the EPA isn't requiring the cement be forced with pressure into the open hole. We assume the statement means the permittee must prepare at least 120% of the calculated volume. This practice will result in the waste/disposal of cement. We encourage the EPA to allow the permittee to prepare 100% of the calculated volume. Any remaining void should be top filled after the cement has cured.
8. Part VII, Section C(4)(d) states the permittee may use air to induce pressure during an MIT. Instead of using "air" we suggest the permittee be allowed to use "compressed gas" which could include air.
9. Part VIII, Section F(4)(b)(i), page 44, requires the water level at the perimeter monitor wells be consistently lower than baseline levels to demonstrate hydraulic control. While it is possible to generally maintain the water level at these measurement points lower than baseline, it will be impossible to keep the water levels below baseline values "consistently." For example, if a single downhole pump breaks down, a resulting pressure wave will quickly migrate out to the monitor well ring and could cause the local water level to temporarily exceed baseline. A temporary pressure wave like this does not indicate that hydraulic control has been lost. However, extended time periods with elevated water levels is an indication that hydraulic control has been lost or may be lost. We recommend the wording be changed to either require a specified percent bleed rate (typically 0.5 to 1%) or allow the permittee a specified time to bring the water level below the baseline level (on the order of one week).